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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WARTALOWICZ, PAUL A	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/661,444	DE WIT, GERRIT	
	Examiner	Art Unit	
	Paul A. Wartalowicz	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed on April 5, 2006 have been fully considered but they are not persuasive.

Applicant argues that Adams is non-analogous art and should not be used as a reference under 103 against the present claims.

This argument is not persuasive for the following reason: Adams is analogous art as evidenced that the Adams' patent is drawn to a bottle or container (col. 1, lines 6-11).

Applicant argues that Adams' container is strictly for the storage of gases, or cryogenic gases.

This argument is not persuasive for the following reason: In response to applicant's argument that Adams' container is strictly for the storage of gases, or cryogenic gases, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.

Applicant argues that Adams' container is not made from a "reinforced polyester" as that term is used in the present application (i.e. a polyester container wherein disposed within the polyester is a reinforcing agent such as glass fibers). Adams' fiber layer is a separate layer surrounding an inner polymer layer.

This argument is not persuasive for the following reason: Adams' discloses a container's wall which is entirely composite in nature with structural fibers embedded

within a resinous matrix comprising the gas impermeable synthetic polymer (col. 5, lines 45-49).

Applicant argues that the containers cited in the references are biaxially oriented containers, formed for example by stretch-blow molding techniques and that the present invention comprise non-biaxially oriented polyesters.

This argument is not persuasive for the following reason: The specification of the current application recites that the reinforced polyester are subsequently shaped into pressurized containers or parts thereof, via processes such as injection blow molding (paragraph 0033, lines 1-5). The Adams' patent discloses that the impermeable polymer may be formed into the liner by an injection molding process (col. 5, lines 5-12). This is evidence that the polymer wall of Adams' is constructed by substantially the same process as the polymer wall of the present invention such that the properties of the Adams' container would be substantially similar as those of the present invention such as being not biaxially-oriented.

Applicant amended the independent claims to include the limitation that the polyester is not biaxially oriented and that support for this amendment can be found in paragraph 0029-0033 of the present application.

This argument is not persuasive for the following reason: There is no support for the amendment in paragraphs 0029-0033 of the present application or elsewhere in the current application.

Applicant argues that Adams' fiber layer is a separate layer surrounding an inner polymer layer.

This argument is not persuasive for the following reason: Adams' discloses a container's wall, which is entirely composite in nature with structural fibers embedded within a resinous matrix comprising the gas impermeable synthetic polymer (col. 5, lines 45-49). This teaching from Adams' in conjunction with the teaching from Mori provides the polyester of the present claims.

Applicant argues that Mori does not mention nor does it provide disclosure of any values or examples that demonstrated how to reduce the transfer of carbon dioxide gas from a liquid phase to the gas phase through the non-oriented reinforced polyester container wall.

This argument is not persuasive for the following reason: Mori teaches that the polyethylene terephthalate bottle has a much reduced permeability of gases such as oxygen and carbon dioxide (col. 1, lines 14-18). This is further evidenced in the '309 patent, polyethylene terephthalate is described as preferred in the construction of the container because it exhibits excellent creep resistance (col. 14, lines 60-65)

Applicant argues that the bottles of the '309 patent have creep properties which are substantially worse than the containers of the present invention.

This argument is not persuasive for the following reason: Mori is not relied upon to teach the same creep properties as those of the invention. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that Duse does not teach a non-biaxially oriented container.

This argument is not persuasive for the following reason: Duse is not relied upon to teach a non-biaxially oriented container. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that the Examiner's citation of a reference from the background section is not proper to arrive at the fiber loadings of the present invention and that the Examiner cannot pick and chose to create a mosaic resembling the current invention.

This argument is not persuasive for the following reason: the teaching for the glass fibers being present in an amount from 1-60% is suggested for the purpose of improving the deflection by heat of said fibers (col. 2, lines 41-48). This teaching is not picking and choosing, it is providing a teaching that suggests the combination.

Applicant argues that throughout the specification, Duse only teaches of the drawback of adding fiber reinforcing agents at any significant level to materials that are to be stretched and blown to produce biaxially oriented products.

This argument is not persuasive for the following reason: Duse teaches that it is known that glass fibers are used in various thermoplastic polyester compositions where the glass fiber concentration is less than 20%, the deflection temperature under load is markedly reduced (col. 2, lines 12-18). This is evidence that Duse teaches an advantage of having glass fibers embedded in thermoplastic polyester.

Applicant argues that the invention disclosed in Duse is the discovery that fibers with specific properties can be introduced into bottles that are biaxially oriented and achieve increases in strength when incorporated in amounts between 0.3 and 5 wt.%.

This argument is not persuasive for the following reason: While Duse may teach the discovery that fibers with specific properties can be introduced into bottles that are biaxially oriented and achieve increases in strength when incorporated in amounts between 0.3 and 5 wt.%, Duse also teach that it is well known for glass fibers being present in an amount of 1-60 wt% (col. 2, lines 41-48).

Applicant argues that the problems of high fiber loading is not observed in the "non-biaxially oriented reinforced polyester containers" of the current invention as they are present in the Duse patent.

This argument is not persuasive for the following reason: Duse teaches that it is well known for glass fibers being present in an amount of 1-60 wt% (col. 2, lines 41-48). The argument that Duse teaches of the problems attributed to and the general unsuitability of using high fiber loading in "biaxially oriented polyester containers" does not change the fact the disclosed amount is 1-60 wt%.

Applicant argues that previously filed Rule 132 declaration discloses that at higher levels of fiber loading than disclosed in the actual examples of Duse, Applicants have found that the fibers contribute to the reduction of permeability and strength, and thus achieve materials that have superior performance.

This argument is not persuasive for the following reason: The Declaration under 37 CFR 1.132 filed November 2, 2005 is insufficient to overcome the rejection of claims 6 and 7 based upon Adams in view of Mori and Duse as set forth in the last Office action because: the declaration is not commensurate in scope with the claimed range of 1 to 50 volume % and does not compare to closest prior art (Duse) which comprises 1 to 2 weight %.

Applicant notes the Examiner's incorrect statement that volume % is taken to be approximately equal to wt%; and that wt% is in fact different from vol. %.

This argument is not persuasive for the following reason: the art still meets the claimed limitation of 1-50 volume %. Wt% and Vol.% are proportionate such that having a wt% of 1-60 meets the limitation of having a vol. % of 1-50.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1-4, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams ('812) in view of Mori et al ('804).

As to claims 1 and 10, Adams teaches a pressurized container made of polyesters reinforced with structural fibers (col. 1, lines 10-11; the container's wall is composite with structural fibers embedded within a resinous matrix, col. 3, lines 49-50; Figure 3, col. 5, lines 46-50). Adams also teaches virtually no leakage and no solubility of the gas in the polymer (col. 3, lines 34-36). Adams teaches that the containers can store pressurized gas which is defined as any mixture or material that, when enclosed in a container, has an absolute pressure exceeding 40 psi at 21.1 degree Celsius or has an absolute pressure exceeding 140 psi at 54.4 degree Celsius (col. 3, lines 5-8). Compressed gases include but are not excluded to oxygen (col. 3, line 13). Adams fails

to teach a pressurized container wherein upon being filled with a liquid having a dissolved carbon dioxide content of about 0.4-0.6 wt % at an internal pressure of at least 1 bar, said pressurized container maintains a dissolved carbon dioxide content of at least 0.25 wt % after 0.5 year at a storage temperature of about 30 to 35 degree Celsius.

Mori et al., however, teaches a polyester bottle comprising polyethylene terephthalate which is well known for much reduced permeability of gases such as oxygen and carbon dioxide (col. 1, lines 17-21). The primary reference, Adams, also teaches that containers such as vessels and bottles for pressurized gases are well known in the art to be made entirely of polymeric materials (col. 1, lines 7-11).

Mori et al. further teaches that polyethylene terephthalate is a widely used material for reducing permeability of carbon dioxide and oxygen in pressurized containers (carbonated drink bottles, col. 1, lines 22-23).

Therefore, one of ordinary skill in the art would have recognized that polyethylene terephthalate is used in the primary reference to reduce permeability of carbon dioxide in pressurized containers since both the primary and secondary reference, Mori et al., teache containers with pressurized gases for reducing permeability of pressurized gases.

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a polyester bottle comprising polyethylene terephthalate in Adams in order to reduce permeability of oxygen gas of the pressurized container as taught by Mori et al.

As to claim 2, Adams teaches reinforcing agents selected from glass or carbon fibers (col. 5, lines 21-22). All of the limitations of claim 3 are drawn to a process and are given no patentable weight because the subject matter being evaluated is the product. As to claim 4, Adams teaches a plurality of reinforcing strips attached to and reinforcing said container with each strip encircling the container in a hoop direction at least once (filament winding of continuous fibers, col. 5, lines 30-32). As to claim 8, Adams teaches a pressurized container having a wall thickness of at least 0.2 mm (5-50 mils, col. 4, lines 64-65). As to claim 9, Adams teaches a pressurized container having a total liquid volume of at least 15 liters (5.5-31000 liters, col. 4, lines 45-48).

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams ('812) in view of Mori et al ('804) in further view of Duse ('763).

Adams and Mori et al. teach a pressurized container as described above.

As to claim 5, Adams and Mori et al. fail to teach a pressurized container wherein the reinforcing agents are glass fibers having a length of at least 0.5 cm.

Duse, however, teaches a reinforced polyester bottle with glass fibers having a length of at least 0.5 cm (0.5-2.0 cm, col. 3, lines 30-34) for the purpose of resisting fracturing during stretch-blow molding.

Therefore, it would have been obvious to one of ordinary skill at the time applicant's invention was made to have provided glass fibers having a length of at least 0.5 cm in Adams and Mori et al. in order to resist fracturing during the stretch-blow molding process as taught by Duse.

As to claim 6, Adams and Mori et al. fail to teach a pressurized container wherein the polyesters are reinforced by glass fibers in an amount of at least 20 wt% based on the total weight of said reinforced polyesters.

Duse, however, teaches a reinforced polyester bottle wherein said glass fibers are present in an amount of at least 20 wt% (1-60 wt%, col. 2, lines 45-46) for the purpose improving the deflection by heat of said fibers.

The deflection by heat of said fibers is important for applications such that require high temperatures such as heat sterilization or hot-filling (col. 2, lines 25-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided glass fibers in an amount of at least 20 wt% based on the total weight of said reinforced polyesters in Adams and Mori et al. in order to improve performance in high temperature applications as taught by Duse.

As to claim 7, volume % is taken to be proportionate to wt %.

Therefore, Duse teaches the glass fibers amount in the range of about 1 to 50 volume % (1-60 wt% by weight of the combined weight, col. 2, lines 44-47).

Claims 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (U.S. 5150812) in view of Mori et al (U.S. 4421804) in further view of Duse (U.S. 4892763) and Zimmerman et al. (U.S. 3814725).

Adams teaches a pressurized container having a wall thickness of at least 0.2 mm (5-50 mils, col. 4, lines 64-65) wherein the wall portion comprises a polyester (col.

3, lines 49-51) and has a reinforcing agent (col. 5, lines 44-51; figure 3) wherein the reinforcing agent is carbon or glass fibers (col. 5, lines 20-25). Adams fails to teach that the wall portion comprises 30 to 50 wt % of the reinforcing agent.

Zimmerman et al., however, teaches polyester such as polyethylene terephthalate and polybutylene terephthalate (col. 1, lines 38-41) with glass fibers (col. 2, lines 46-50) in the amount of from 20-50 wt % (col. 2, lines 63-66, col. 4, lines 5-20) for the purpose of imparting outstanding physical properties (col. 1, lines 42-49) for molding resins (col. 1, lines 50-55).

Duse teaches that it is common for beverage containers to comprise polyethylene terephthalate (col. 1, lines 42-45).

Therefore, it would have been obvious to one of ordinary skill in the art to provide polyester with glass fibers in the amount of from 20 to 50 wt % (col. 2, lines 63-66, col. 4, lines 5-20) in Adams in order to impart outstanding physical properties (col. 1, lines 42-49) in a material known for molded resins (col. 1, lines 50-55) as taught by Zimmerman.

As to claims 10 and 19 referring to permeability property, Adams teaches a pressurized container made of reinforced polyesters (col. 1, lines 10-11; col. 3, lines 49-50; Figure 3, col. 5, lines 46-50). Adams also teaches virtually no leakage and no solubility of the gas in the polymer (col. 3, lines 34-36). Adams teaches that the containers can store pressurized gas which is defined as any mixture or material that, when enclosed in a container, has an absolute pressure exceeding 40 psi at 21.1 degree Celsius or has an absolute pressure exceeding 140 psi at 54.4 degree Celsius

(col. 3, lines 5-8). Compressed gases include but are not excluded to oxygen (col. 3, line 13). Adams fails to teach a pressurized container wherein upon being filled with a liquid having a dissolved carbon dioxide content of about 0.4-0.6 wt % at an internal pressure of at least 1 bar, said pressurized container maintains a dissolved carbon dioxide content of at least 0.25 wt % after 0.5 year at a storage temperature of about 30 to 35 degree Celsius.

Mori et al., however, teaches a polyester bottle comprising polyethylene terephthalate which is well known for much reduced permeability of gases such as oxygen and carbon dioxide (col. 1, lines 17-21). The primary reference, Adams, also teaches that containers such as vessels and bottles for pressurized gases are well known in the art to be made entirely of polymeric materials (col. 1, lines 7-11).

Mori et al. further teaches that polyethylene terephthalate is a widely used material for reducing permeability of carbon dioxide and oxygen in pressurized containers (carbonated drink bottles, col. 1, lines 22-23).

Zimmerman, teach polyester such as polyethylene terephthalate and polybutylene terephthalate (col. 1, lines 38-41) with glass fibers (col. 2, lines 46-50) in the amount of from 20-50 wt % (col. 2, lines 63-66, col. 4, lines 5-20) for the purpose of imparting outstanding physical properties (col. 1, lines 42-49) for molding resins (col. 1, lines 50-55) which inherently reduces permeability.

Therefore, one of ordinary skill in the art would have recognized that polyethylene terephthalate is used in the primary reference to reduce permeability of carbon dioxide in pressurized containers since both the primary and secondary

reference, Mori et al., teach containers with pressurized gases for reducing permeability of pressurized gases and Zimmerman teaches a polyester with glass fibers of from 20 to 50 wt % (col. 2, lines 63-66, col. 4, lines 5-20) which commonly comprises beverage containers.

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided a polyester bottle comprising polyethylene terephthalate in Adams in order to reduce permeability of oxygen gas of the pressurized container as taught by Mori et al.
Therefore, the combined teachings of Adams, Mori et al., Duse, and Zimmerman would result in the claimed permeability.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571) 272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Wartalowicz
June 1, 2006

COLLEEN P. COOKE
PRIMARY EXAMINER